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Application number 09/682,007 LeRoy David Dickson Art Unit 2872 1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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TC 2800 MAIL ROOM

Application Number: 09/682,007  
Application Filed: July 9, 2001  
Applicant: LeRoy David Dickson  
Title of Invention: Enhanced Volume Phase Grating with High Dispersion,  
High Diffraction Efficiency and Low Polarization Sensitivity  
Examiner: Audrey Y. Chang  
Art Unit: 2872  
Attorney Docket Number: 07032001

#3/A  
Amend  
Attach  
J. McMillan  
3/5/02

Assistant Commissioner for Patents  
Washington, DC 20231

RESPONSE TO OFFICE ACTION

Madam:

In response to the Office Action mailed December 12, 2001, please amend the above application as follows:

AMENDMENT OF THE CLAIMS:

Cancel all claims of record and substitute new claims 9 to 16 as follows:

9. An enhanced volume phase grating comprising

a rigid support means;

a volume phase medium attached to said rigid support means;

a transparent cover means attached to said volume phase medium with a transparent adhesive to provide a sealant and protectant for said volume phase medium;

the bulk refractive index,  $n$ , of said volume phase medium being periodically modulated within the thickness,  $T$ , of said volume phase medium in a direction parallel to the surface of said volume phase medium, with a peak value of refractive index equal to  $n + \Delta n$ , where  $\Delta n$  is the peak modulation of said bulk refractive index,  $n$ , the periodic sequence of said peak values of said refractive index throughout said thickness,  $T$ , of said volume phase medium creating a periodic structure of Bragg surfaces within said volume phase medium with a period,  $d$ , where